WHAT IS CLAIMED IS:

1. An optical multilayer structure material comprising an optical thin film having a bridge structure on a substrate through a gap portion having a size that enables an interference phenomenon to occur, wherein an amount of a light which reflects off, is transmitted by, or is absorbed by said optical thin film is changed depending on displacement of said optical thin film in a direction perpendicular to said substrate,

said optical thin film comprising a movable portion, and a supporting portion for uniformly supporting a circumference of said movable portion by surrounding said gap portion.

2. The optical multilayer structure material according to claim 1, further comprising, as one electrode, a conductive layer formed so as to be in contact with said substrate, wherein said optical thin film is formed as another electrode at a position opposite to said conductive layer.

3. The optical multilayer structure material according to claim 1, wherein said movable portion in said optical thin film has a plane in a rectangular form.

4. The optical multilayer structure material according to claim 1, wherein said movable portion in said optical thin film has a plane in a circular form.

5. The optical multilayer structure material according

to claim 1, wherein said movable portion in said optical thin film has a plane in an elliptic form.

6. The optical multilayer structure material according to claim 1, wherein said supporting portion in said optical thin film slopes at an oblique angle to the surface of said substrate.

7. The optical multilayer structure material according to claim 1, wherein said optical thin film has, in at least one of said movable portion and said supporting portion, a through hole in communication with said gap portion.

8. The optical multilayer structure material according to claim 3, wherein said optical thin film further comprises a recess portion at a position corresponding to each of corner portions of said movable portion in a rectangular form in said optical thin film.

9. The optical multilayer structure material according to claim 2, wherein at least one of said conductive layer and said optical thin film is a composite layer comprising two or more layers having different optical properties.

10. The optical multilayer structure material according to claim 2, further comprising driving means for changing an optical size of said gap portion, wherein said driving means changes the size of said gap portion to change the amount of a light which reflects off or is transmitted by

said optical thin film with respect to a light entering from the side of said substrate or the side opposite to said substrate.

11. The optical multilayer structure material according to claim 9, wherein said driving means changes the optical size of said gap portion by using an electrostatic force generated by applying a voltage to said conductive layer and said optical thin film.

12. The optical multilayer structure material according to claim 9, wherein said driving means changes the optical size of said gap portion by using a magnetic force.

13. A process for producing an optical multilayer structure material which comprises an optical thin film having a bridge structure on a substrate through a gap portion having a size that enables an interference phenomenon to occur, wherein an amount of a light which reflects off, is transmitted by, or is absorbed by said optical thin film is changed depending on displacement of said optical thin film in a direction perpendicular to said substrate,

said process comprising the steps of:

forming, on a substrate, a pattern for a sacrifice layer having a predetermined thickness, and forming an optical thin film so that the optical thin film covers a surface and a sidewall portion of said sacrifice layer and has a through hole for etching which reaches said sacrifice layer; and

subjecting the optical thin film to etching via said through hole to selectively remove said sacrifice layer, and forming, in said optical thin film, a movable portion and a supporting portion for uniformly supporting a circumference of said movable portion by surrounding said gap portion.

14. The process according to claim 13, wherein said optical thin film has a plane in a rectangular form, and wherein said process further comprises a step of forming a recess portion for stress relaxation at a position corresponding to each of corner portions of said optical thin film in a rectangular form.

15. A light switching device comprising:

an optical multilayer structure material which comprises an optical thin film having a bridge structure on a substrate through a gap portion having a size that enables an interference phenomenon to occur, wherein an amount of a light which reflects off, is transmitted by, or is absorbed by said optical thin film is changed depending on displacement of said optical thin film in a direction perpendicular to said substrate; and

driving means for changing the optical size of said gap portion in said optical multilayer structure material, wherein:

said optical thin film comprising a movable portion, and a supporting portion for uniformly supporting a circumference of said movable portion by surrounding said gap portion.

16. The light switching device according to claim 15, wherein a plurality of said optical multilayer structure materials are arranged in a one-dimensional array form.

17. The light switching device according to claim 15, wherein a plurality of said optical multilayer structure materials are arranged in a two-dimensional array form.

18. An image display apparatus for displaying a two-dimensional image by irradiating with a light a plurality of light switching devices which are one-dimensionally or two-dimensionally arranged,

each of said light switching devices comprising:

an optical multilayer structure material which comprises an optical thin film having a bridge structure on a substrate through a gap portion having a size that enables an interference phenomenon to occur, wherein the amount of a light which reflects off, is transmitted by, or is absorbed by said optical thin film is changed depending on the displacement of said optical thin film in a direction perpendicular to said substrate; and

driving means for changing the optical size of said gap portion in said optical multilayer structure material,

said optical thin film comprising a movable portion, and a supporting portion for uniformly supporting a circumference of said movable portion by surrounding said gap portion.